REMARKS

Applicants appreciate the Examiner's thorough examination of the present application and withdrawal of the previous prior art rejections. Applicants have carefully examined the newly cited references and have amended independent Claims 1, 24, 40, and 41 and dependent Claims 7 and 8 to further clarify their bases for patentability. Applicants request reconsideration and allowance in view of the above amendments and the following remarks.

Status of the Claims:

Claims 1, 3-5, 13, 21-24, 26, 28, 31-34, 37, 38, 40, and 41 stand rejected under 35 U.S.C. 102(e) as anticipated by U.S. Pat. No. 6,901,446 to Chellis et al. ("Chellis"). Claims 8-10 and 12 stand rejected under 35 U.S.C. 103(a) as unpatentable over Chellis in view of U.S. Pat. Publ. No. 2003/0152028 to Raisanen et al. ("Raisanen"). Claims 14-16 and 29 stand rejected under 35 U.S.C. 103(a) as unpatentable over Chellis in view of U.S. Pat. No. 6,999,474 to Goyal et al. ("Goyal"). Claims 7 and 27 stand rejected under 35 U.S.C. 103(a) as unpatentable over Chellis. Claim 11 stands rejected under 35 U.S.C. 103(a) as unpatentable over Chellis in view of U.S. Pat. No. 6,628,610 to Waclawsky et al. ("Waclawsky"). Claims 17-20 stand rejected under 35 U.S.C. 103(a) as unpatentable over Chellis in view of U.S. Pat. Publ. No. 2004/0095914 to Katsube et al. ("Katsube").

Independent Claims 1, 24, 34, 40, and 41 are Not Anticipated by Chellis:

According to exemplary embodiments, a network communication QoS level is requested for each of a plurality of applications of a service provider. A network communication QoS level is allocated to individual ones of the applications in response to the QoS requests. A wide area network uses the allocated network communication QoS levels *to manage network communication QoS that is provided to network communications from the respective applications of the service provider.* The wide area network can thereby provide different levels of QoS to network communications from different ones of the applications in response to their respective QoS allocations.

For example, amended Claim 1 recites:

1. A method of managing Quality of Service (QoS) in a communication network, the method comprising:

for each of a plurality of applications of a service provider which will communicate across the communication network, requesting a level of network communication QoS using QoS requests from the service provider;

allocating levels of network communication QoS to individual ones of the applications of the service provider in response to the QoS requests; and

managing network communication QoS that is provided <u>by a wide area network</u> to network communications ~~by~~ <u>from</u> the individual applications of the service provider in response to the network communication QoS levels allocated to the respective individual applications.

In contrast, referring to Figure 1, shown below, Chellis describes a resource allocator 30 that allocates resources 25 for use by a consumer 20.

FIG. 1 of Chellis
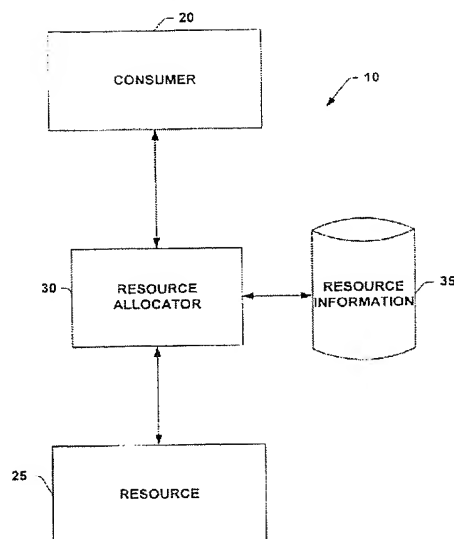
The Office Action cites col. 3, lines 17-23, and col. 8 line 51- col. 9, line 15 of Chellis as bases to reject Claim 1. The cited portions of Chellis describe that the consumer 20 can be a human or machine, and that the resource 25 can be an application. Accordingly, the resource allocator 30 can allocate the application for use by a human, when the consumer 20 is a human, or for execution by a machine, when the consumer 20 is a computer. (See Col. 8, lines 57-60). Chellis further describes with regard to FIG. 11, shown below, that the resource allocator 30 selectively grants (block 450) or denies (block 442) a request from the consumer 20 for a resource 25 based on whether the consumer 20 has sufficient resources (processor time and communication bandwidth) to execute the resource 25 (block 430). (*See* Chellis, col. 8, lines 51-53).

Portion of FIG. 11 of Chellis
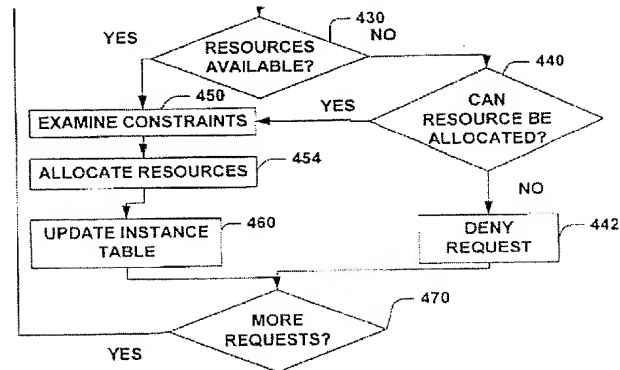
Nowhere in the cited portions nor elsewhere does Chellis describe that levels of *network communication QoS* are allocated to individual applications. In contrast, Chellis selectively allocates or denies allocation of an application resource 25 to a consumer 20 based on the resources of the consumer 20 (processor time and communication bandwidth).

Moreover, neither the cited portion nor elsewhere does Chellis describe that *network communication QoS that is provided by a wide area network to network communications from the individual applications of the service provider is managed in response to the network communication QoS levels allocated to the respective individual applications.*

Chellis therefore does not anticipate amended Claim 1.

Amended independent Claim 24 contains similar recitations to amended Claim 1 and is submitted to not be anticipated by Chellis for substantially the same reasons as amended Claim 1.

Independent Claim 34 recites a wide area network that communicatively couples an application framework infrastructure and a plurality of routing gateways. The application framework infrastructure is configured to allocate levels of network communication QoS to individual applications of a service provider in response to QoS requests from the service provider. The routing gateways then manage network communication QoS that is provided to network communications through the wide area network by individual ones of the applications of the service provider in response to the allocated levels of network communication QoS.

Chellis does not describe any management of network communication QoS that is provided to network communications through a wide area network and, moreover does not

describe that network communications through a wide area network by individual applications of a service provider are managed in response to levels of network communication QoS that is allocated to the respective applications of the service provider. Again, Chellis selectively allocates or denies allocation of an application resource 25 to a consumer 20 based on the available resources of the consumer 20.

Chellis therefore does not anticipate independent Claim 34.

Amended independent Claim 40 is similar to amended Claim 1, but further recites that a different network communication QoS level is allocated to each one of a plurality of applications of a service provider. Chellis does not describe any allocation of different network communication QoS levels to different applications of a service provider. Chellis therefore does not anticipate amended Claim 40 for at least the reasons explained above for amended Claim 1.

Amended independent Claim 41 is similar to amended Claim 1, but further recites that a different network communication QoS level is allocated to each one of a plurality of IP addresses associated with different applications of a service provider. The Office Action cites col. 3, lines 17-23, and col. 8 line 51- col. 9, line 15 of Chellis as the basis to reject Claim 41. Applicants have reviewed the cited portions of Chellis and submit that nowhere does Chellis described that *different network communication QoS levels* are allocated to each one of a *plurality of IP addresses associated with different applications of a service provider.* Chellis therefore does not anticipate independent Claim 41.

Reconsideration and allowance of independent Claims 1, 24, 34, 40, and 41 is respectfully requested.

The dependent claims are submitted to be patentable at least based on the patentability of the independent claims from which they depend. Moreover, Applicants submit that the dependent claims provide independent bases for patentability for at least the reasons explained below.

Dependent Claims 3-5, 7, 13, 21, 37, and 38 are Patentable Over Chellis:

Claim 3 is further directed to how each of the applications can request and be allocated differing network communication QoS levels. In particular, Claim 3 recites that a

plurality of *network communication QoS requests* are generated, where each of the network communication QoS requests is for a different one the plurality of applications of the service provider. As explained above, Chellis selectively allocates or denies allocation of an application resource 25 to a consumer 20 based on the resources of the consumer 20. Chellis does not describe or suggest that a request for network communication QoS is made from each one of a plurality of different applications. Consequently, Applicants submit that Claim 3 is patentable over Chellis, and therefore request allowance thereof.

Claim 4 adds to Claim 3 by further reciting that a network communication QoS level is allocated to a particular one of the service provider applications in response to a QoS request from the particular application. Accordingly, Applicants submit that Claim 4 provides further independent bases for patentability over Chellis.

Claim 5 adds to Claim 3 by further reciting that a network capacity level is allocated for communications by a particular one of the applications of the service provider in response to a QoS request from the particular application, and that network communications by the particular one of applications of the service provider through the wide area network are constrained to the allocated network capacity level. Again, Chellis does not describe or suggest that a wide area network constrains communications from a particular application of the service provider to a network capacity level that is allocated to that particular application. Consequently, Applicants submit that Claim 5 is patentable over Chellis, and therefore request allowance thereof.

Claim 26 contains similar recitations to amended Claim 5 and is submitted to be patentable over Chellis for at least the reasons explained for Claim 5.

Amended Claim 7 recites that a communication priority level for communications through the communication network by a particular one of the applications of the service provider is allocated in response to a QoS request for the particular application, and that network communications by the particular one of applications through the wide area network are prioritized in response to the allocated network communication priority level. Because Chellis describes selectively granting or not granting a requested allocation of an application resource 25 to a consumer 20, and is silent as to managing communications through a wide area network from an application, Applicants submit that the further subject matter of

amended Claim 7 to prioritizing network communications by a particular application through the wide area network in response to an allocated network syndication priority level are patentable over Chellis.

Claim 37 contains similar recitations to amended Claim 7 and is submitted to be patentable over Chellis for at least the reasons explained for Claim 7.

Amended Claim 21 recites that allocation of the requested network communication QoS level includes notifying a broadband remote access server of the network communication QoS levels allocated to particular applications of the service provider. Neither the portion cited by the Office Action nor elsewhere does Chellis disclose a broadband remote access server or, much less, that a notice of the network communication QoS levels allocated to particular application of a service provider is provided to a broadband remote access server. Consequently, Applicants submit that Chellis does not anticipate Claim 21.

Claims 32 and 38 contain similar recitations to Claim 21 and are submitted to not be anticipated by Chellis for at least the reasons explained for Claim 21.

Claim 22 recites that allocation of the requested QoS level includes notifying a routing gateway of the network communication QoS levels allocated to particular applications of the service provider. Neither the portion cited by the Office Action nor elsewhere does Chellis disclose a routing gateway or, much less, that a notice of the network communication QoS levels allocated to particular application of a service provider is provided to a routing gateway. Consequently, Applicants submit that Chellis does not anticipate Claim 22. Claim 33 contains similar recitations to Claim 22 and is submitted to not be anticipated by Chellis for at least the reasons explained for Claim 22.

Dependent Claims 8-10 and 12 are Patentable over Chellis in view of Raisanen:

Claim 8 recites that an allowed information delay level for communications through the communication network is allocated to a particular one of the applications of the service provider in response to a network communication QoS request for the particular application, and that network communications by the particular one of applications of the service provider are managed in response to the allocated allowed information delay level. The Office Action

concedes that Chellis does not disclose these recitations of Claim 8, however, it contends that Raisanen supplies the missing teaching. However, as described in detail in Applicants' Amendment dated July 23, 2007, Raisanen describes that QoS levels are requested for an entire communication terminal, and that the requested QoS level is either allocated or denied for the entire communication terminal. (e.g., See Raisanen, paragraph 0064). Raisanen does not describe or suggest that an allowed information delay level for communications through a communication network can be allocated to a particular one of a plurality of applications on a communication terminal in response to a network communication QoS request for the particular application, and does not describe or suggest that network communications by a particular application of a service provider is managed in response to an allocated allowed information delay level. Consequently, Applicants submit that Claim 8 is patentable over Chellis in view of Raisanen, and therefore request allowance thereof.

Claim 9 recites that an allowed information loss rate for communications through the communication network is allocated to a particular one of the applications of the service provider in response to a QoS request for the particular application, and that network communications by the particular application of the service provider are managed in response to the allocated allowed information loss rate. The Office Action concedes that Chellis does not disclose these recitations of Claim 9, however, it contends that Raisanen supplies the missing teaching. However, as described in detail in Applicants' Amendment dated July 23, 2007, Raisanen describes that QoS levels are requested for an entire communication terminal, and that the requested QoS level is either allocated or denied for the entire communication terminal. (e.g., See Raisanen, paragraph 0064). Raisanen does not describe or suggest that an allowed information loss rate for communications through a communication network can be allocated to a particular one of a plurality of applications on a communication terminal in response to a QoS request for the particular application, or that network communications by a particular application of a service provider are managed in response to an allocated allowed information loss rate. Consequently, Applicants submit that Claim 9 is patentable over Chellis in view of Raisanen, and therefore request allowance thereof.

Claim 10 recites that an allowed packet size for communications through the communication network is allocated to a particular one of the applications of the service

provider in response to a QoS request for the particular application, and that network communications by the particular application of the service provider are constrained in response to the allocated allowed packet size. The Office Action concedes that Chellis does not disclose these recitations of Claim 10, however, it contends that Raisanen supplies the missing teaching. However, Raisanen does not describe or suggest that an allowed packet size for communications through a communication network can be allocated to a particular one of a plurality of applications on a communication terminal in response to a QoS request for the particular application, or that network communications by a particular application of a service provider are constrained in response to an allocated allowed packet size. Consequently, Applicants submit that Claim 10 is patentable over Chellis in view of Raisanen, and therefore request allowance thereof.

Dependent Claim 11 is Patentable over Chellis in view of Waclawsky:

Claim 11 recites that a Maximum Transmission Unit size for communications through the communication network is allocated to a particular one of the applications of the service provider in response to a network communication QoS request for the particular application, and that network communications by the particular one of applications of the service provider are constrained in response to the allocated Maximum Transmission Unit size. The Office Action concedes that Chellis does not disclose these recitations of Claim 11, however, it contends that Waclawsky supplies the missing teaching. Although Waclawsky describes regulation of maximum transmission unit size for data packets, Waclawsky does not describe or suggest that a Maximum Transmission Unit size can be allocated to a particular one of a plurality of applications on a service provider in response to a network communication QoS request for the particular application, and does not describe or suggest that network communications by the particular application of a service provider are *constrained in response to an allocated Maximum Transmission Unit size*. Consequently, Applicants submit that Claim 11 is patentable over Chellis in view of Waclawsky, and therefore request allowance thereof.
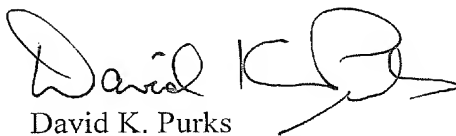
Dependent Claims 17-20 are Patentable over Chellis in view of Katsube:

Claim 17 recites, *inter alia*, that the QoS request for an application on the service provider is evaluated based on information in a known field in the data packet. Although the Office Action concedes that Chellis does not describe the features of Claim 17, it contends that Katsube discloses these features. Although Katsube describes that QoS information for a particular message can be contained in the message header, it does not describe or suggest that a QoS request *for a particular application on a service provider* is evaluated or that such evaluation can be done based on a QoS request within a known field of a data packet. Consequently, Applicants submit that Claim 17 and Claims 18-20 which depend therefrom are patentable over Chellis in view of Katsube. Moreover, Applicants submit that Claims 18-20 provide further independent bases for patentability as they define further patentable features for how a QoS request *for a particular application on the service provider* is embedded within a data packet and evaluated, none of which is disclosed by Chellis and Katsube.

CONCLUSION

In view of the above amendments and remarks, Applicants respectfully request withdrawal of all objections and rejections and the allowance of all claims in due course. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is encouraged to contact the undersigned by telephone at (919) 854-1400.

Respectfully submitted,

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